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Approved by OMB 3060-0065 Expires 9/30/98

SECTION I

FEDERAL COMMUNICATIONS COMMISSION

IONS COMMISSION FCC/IVELON FCC USE ONLY

SEP 0	4 1998 4 1998	PLI(CATE
	-		

FCC FORM 442

APPLICANT NAME (Last, first, i	•			
Satellite CD Radio, MAILING ADDRESS (Line 1) (M	Inc. faximum 35 characters - refer to Ins	truction (2) on reverse of	(form)	
2175 K Street, NW			10(11)	
MAILING ADDRESS (Line 2) (if	required) (Maximum 35 characters)		
6th Floor				
СПҮ				
Washington				
STATE OR COUNTRY (if foreign	address)	ZIP CODE	CALL SIGN OR F	LE NUMBER
DC .		20037	. <u> </u>	
Enter in Column (A) the correct Fee Column (B) the Fee Multiple, if applic	Type Code for the service you are apply sable. Enter in Column (C) the result of	ring for, Fee Type Codes materials from multiplying the	nay be found in FCC i value of the Fee Tvo	Fee Filing Guides, Enter in B Code in Column (A) by
the number entered in Column (B), if	any.			
(A)	(B)	(C)		
FEE TYPE CODE	(if required)	CODE IN COL		FOR FCC USE ONLY
1) E A E		\$ 45.00		
				<u> </u>
	ised only when you are requesting con- ie Fee Type Code.	current actions which resul	It in a requirement to I	ist more
	(B)	(C)		
(A) FEE TYPE COD E	FEE MULTIPLE	FEE DUE FOR	FEE TYPE	FOR FCC USE ONLY
	(if required)	CODE IN CO	LUMN (A)	
				
2)		\$	<u>·</u>	
		-		
				
3)		3		
				
				
4)		\$		
<u></u>	\			
			 1	Ì
5)		\$		
		<u></u>		
ADD ALL AMOUNTS SHOWN IN CO THROUGH (5), AND ENTER THE TO	OTAL HERE.	TOTAL AMOUN WITH THIS AP	T REMITTED	FOR FCC USE ONLY
THIS AMOUNT SHOULD EQUAL YOR REMITTANCE.	OUR ENCLOSED	ORFL		1 011 00 000 01101
KEMIT I ANGE.			1	1
		45.00	1	1

No. 4)	Name and Post (ss, city, state, ar	Office address and ZIP Code. See ins	truction	File No.	DO NOT WRITE IN THIS	BLOCK
	CD Radio, reet, NW, n, DC 200	6th Floor				
2(a). Application f	or (check only o	ne box)		2(b). For Modification	n indicate below:	
New station	M	odification of existing auti	orization			
3. Application f	or Modification	: Check the box besi	de all particulars to	File No.:	Call :	Sign:
the change is	an addition or a	replacement of part	ameters in the curre	ent authorization.	ner addition of replaceme	in to moreste whether
FREQUENCY -		EMISSION -		POWER -	LOCA	TION -
addition or	replacement?	addition or	replacement?	addition or r	eplacement? add	dition or replacement?
OTHER PARTICUL	ARS - addition or re	niscement? (Describe he	low or in attached FYHII	BIT No	,	•
		processor (Describe pe			- /	
I. Particulars of Ope	eration (see insti	ruction below)				
Frequency (state					MODULATING	NECESSARY BANDWIDTH
whether NH2 or MH2)		POWER		EMISSION	SIGNAL	(kHz)
(A) 2326.1 MHz	(8)	(C)	(D)	(E)	(F)	(G)
2326.1 PINZ	1000W	50.000w	MEAN	<u> </u>	1536 kHz	1,536
	1		 		384 4 kHz	
				<u> </u>		
	 	<u></u>		ļ		
			l.	1		1
			 	 	 	
					DITM	
•		•	•	-	BIT No.	.)
B) Insert maxim	um R.F. output (power at the fransmi	tter terminals. Spec	cify units.		.)
B) Insert maximo C) Insert maximo	um R.F. output um effective rad	power at the transmi	ner terminals. Spece e antenna (If pulsec	-		.)
B) Insert maximo C) Insert maximo D) Insert "MEAI	um R.F. output um effective rad N" or "PEAK" (power at the transmi liated power from the See definitions in Pa	nter terminals. Spece antenna (If pulseont 5).	cify units. d emission, specify peak		.)
B) Insert maximi C) Insert maximi D) Insert "MEAI E) List each type	um R.F. output um effective rad N" or "PEAK" (e of emission sep	power at the fransmi liated power from the See definitions in Pa parately for each free	nter terminals. Spece antenna (If pulseont 5).	cify units.		.)
B) Insert maximi C) Insert maximi D) Insert "MEAI E) List each type F) Insert as appr	um R.F. output um effective rad N" or "PEAK" (e of emission ser copriate for the r	power at the fransmi liated power from the See definitions in Proparately for each free type of modulation:	nter terminals. Spece antenna (If pulseont 5).	cify units. d emission, specify peak		
B) Insert maximi C) Insert maximi D) Insert "MEAI E) List each type F) Insert as appr (1) the maximi	um R.F. output pum effective rad N" or "PEAK" (e of emission sep- copriate for the p imum speed of k	power at the fransmi liated power from the See definitions in Paparately for each free type of modulation: teying in bauds;	nter terminals. Spece antenna (If pulseont 5).	cify units. d emission, specify peak		.)
B) Insert maximi C) Insert maximi D) Insert "MEAI E) List each type F) Insert as appr (1) the maxi (2) maximum	um R.F. output pum effective rad N" or "PEAK" (to of emission sep- copriate for the to imum speed of k m audio modula	power at the fransmi liated power from the See definitions in Pa- parately for each free type of modulation: teying in bauds; ting frequency;	nter terminals. Spece antenna (If pulseont 5).	cify units. d emission, specify peak		.)
B) Insert maximi C) Insert maximi D) Insert "MEAI E) List each type F) Insert as appr (1) the maximi (2) maximum (3) frequence	um R.F. output pum effective rad N" or "PEAK" (e of emission sep- copriate for the p imum speed of k	power at the fransmi liated power from the See definitions in Proparately for each free type of modulations: seying in bauds; ting frequency; arrier;	nter terminals. Spece antenna (If pulseont 5).	cify units. d emission, specify peak		.)
B) Insert maximi C) Insert maximi D) Insert "MEAI E) List each type F) Insert as appr (1) the maxi (2) maximum (3) frequence (4) pulse du	um R.F. output pum effective rad N" or "PEAK" (e of emission ser opriate for the p imum speed of k m audio modularly deviation of caration and repet	power at the fransmi liated power from the See definitions in Proparately for each free type of modulations: seying in bauds; ting frequency; arrier;	nter terminals. Spece e antenna (If pulsed art 5). quency. (See Sectio	cify units. I emission, specify peak In 2.201 of FCC Rules.)		.)

CA Number Fairm 5(b)(1).	County Alameda	MOBIL KED location, give to City or Town			BASE AND MOBILE	
CA Number Fairm 5(b)(1).	County Alameda		ociow;			
CA Number Fairu 5(b)(1).	Alameda				1 1 moone, describe	the exact area of operation
Fairu 5(b)(1).		San Lear	ndro			
5(b)(1).	r and street (or other indication	n of location) (Sat	n Leandro Hil	lls)	Receive-only ve	hicular
	mont Drive					
	. Enter geographical coordinates ex	act to the nearest second	d (see instruction 10)	•	5(c) (1) Enter geographical coomobile operation (see instruction	ordinates of the approximate center of 10)
North Lati	itude (DD-MM-SS)	West Longitude (DD-A	AM-SS)		North Latitude	West Longitude
36	43 23	122	07 204			
	Datum (see instruction 10):				NAD 83	
	Is a directional antenna (other		XX YES		NO	
	If "YES", give the following in					
	(a) Width of beam in degrees :					
((b) Orientation in horizontal p	lane1204	240	(c) (Drientation in vertical plane	
	Is this authorization to be used United States Government?	d for fulfilling the re	quirement of a gove	rnment	contract with an agency of th	ne
	Ciffice States Coverialists:		☐ YES	K)	NO	
1	If "YES", attach as EXHIBIT	No				t, agency and contact number.
	ls this authorization to be used					
j	urisdiction of a foreign govern	nment?	C	_	\\ 0	
ī	KNYCCH CVUMIT	Na	YES	5		and the name of the faction
	If "YES", attach as EXHIBIT government concerned.	No	, the following intori	mation;	Provide the contract number	and the name of the foreign
•	-				<u>:</u>	
	Is this authorization to be used the research project),	d for providing com	munications essentia	ul to a re	search project? (The radio o	communication is not the objective of
			YES			
	If "YES", attach as EXHIBIT				ding the following informati	ion:
	(a) A description of the nature					
	(b) A showing that the commo				the research project involve	a.
((c) A showing that existing co	ommunications faci	lities are inadequate	-		
	If all the answers to items 7, 8 following:	8, and 9, are "NO",	anach as EXHIBIT	No	I, a narrative sta	tement describing in detail the
,	(a) The complete program of	research and experi	mentation proposed	includir	ng description of equipment	and theory of operation.
((b) The specific objectives so	ught to be accompli	shed.			
((c) How the program of expen	rimentation has a re	asonable promise of	contrib	ution to the development, ex	ctension, expansion, or utilization of
	the radio art, or is along li					an arranged in this
	(a). Give an estimate of the le application: 2 ye	ears				
	(b) If less than 2 years, give t required:					
12.	Would a Commission grant of	f this application co	me within Section 1	.1307 of	the FCC Rules, such that it	may have a significant
,	environmental impact (see ins	struction 11)?	C7 1000	77 1	NO	
	If "YES", attach as EXHIBIT	· N/-	YES		NO	1311.
	II "YES", attach as EXHIBII	NO	an Chandranelian V	-3-331116		
13.	List below transmitting equip	oment to be installed	i (if experimental, se	o state):		NO. OF UNITS
	MANUFACTURER			EL NUMI	BER	
Uni	iqu e System s		DAB2005/0-1	UTX		16

14.	Is the equipm	nent listed in Item [3	capable of station identifica	ation pursuant to Section 5.1	52?	☐ YES	XX NO
15.	Will the ante	nna extend more than will the proposed ante	or modified on the exist	or if mounted on an existing structure other than a bi	ng building, will it extend m	ore than 6 met	ers above the
_	If "YES", giv	ve the following (see	instruction 9):	∐ NO			
			tip of antenna is30)meters.			
			s site above mean sea level		mciers.		
				K to Hayward Air		1.91	
	(d) List any	natural formations of	existing man-made structur	es (hills, trees, water tanks, minimize the aeronautical	lowers etc.) which in the	kilometers.	pplicant.
	(e) Submit a meters at available	WAS SHOOMS IN THE 215	I , a vertical promificant features. Clearly in	ofile sketch of total structure adicate existing portion, noti	including supporting building particulars of aviation ob	ing, if any, givi estruction light	ng heights in ing already
16.	Applicant is:	(Check only one box)				<u></u>	· · · · · · · · · · · · · · · · · · ·
	☐ INDIVID	UAL AS	SOCIATION PA	ARTNERSHIP XX C	ORPORATION		
	OTHER	describe in space pro	vided below)		•		
17.			or a representative of a fore			YES	XX NO
18.	Has applicant denied by this	or any party to this a	pplication had any FCC sta	tion license or permit revoke	ed or had any application for	r permit, licens	a or renewal
	•	Commission?				•	se or remewar
	If "YES", atta	s Commission? ach as EXHIBIT No.		ent giving call sign of licens	e or permit revoked and rela	YES	NO.
19.		s Commission?	, a statem		e or permit revoked and rela	YES	NO.
19.	Will applican	s Commission? ach as EXHIBIT No. t be owner and operat	. a statementor of the station?	ent giving call sign of licens		YES ate circumstance	NO NO
	Will applican	s Commission? ach as EXHIBIT No. t be owner and operat	. a statementor of the station?			YES ate circumstance	NO NO
20.	Will applican Give name, ti pertaining to	s Commission? ach as EXHIBIT No. t be owner and operative, and telephone nutrities application.	, a statementor of the station? mber (include area code), a	ent giving call sign of licens	f applicable) of person who	YES THE STATE OF	NO NO le inquiries
20.	Will applican Give name, ti pertaining to Robert D. APPLICANT A By checking denial of fede of 1988, 21 U	ach as EXHIBIT No. t be owner and operate tile, and telephone nut this application. Briskman, Pre ANTI-DRUG ABUSE C 'YES", the individual ral benefits, including S.C. 862. A non-indi-	. a statement or of the station? mber (include area code), a esident, Satellite ERTIFICATION: applicant certifies that he of gFCC benefits, as a result of ividual applicant, e.g., corported.	ent giving call sign of licens nd Internet e-mail address (i	f applicable) of person who 02-296-6840, rbri case. This requires that he opursuant to Section 5301 of unincorporated association.	YES ate circumstant YES can best hand skman@cdr r she is not sub the Anti-Drug , certifies that is purposes, see 4	NO le inquiries radio.com oject to a Abuse Act no party to 7 CFR
20. F	Will applican Give name, ti pertaining to Robert D. APPLICANT A By checking denial of fede of 1988, 21 U the applicatio 1.2002(b).	ach as EXHIBIT No. t be owner and operative, and telephone nutritis application. Briskman, Presented and Series and telephone nutritis application. Briskman, Presented and Series and S	a statementor of the station? mber (include area code), a state of the station? Estident, Satellite ERTIFICATION: applicant certifies that he of the state of	ent giving call sign of licens nd Internet e-mail address (i CD Radio, Inc. 2 or she is eligible for this lice of a drug offense conviction oration, partnership or other ant to that section. For defin	f applicable) of person who 02-296-6840, rbri	YES ate circumstance XX YES can best hand skman@cdr r she is not sub the Anti-Drug certifies that	NO le inquiries radio.com le inquiries radio.com le inquiries radio.com radio.com radio.com
20. F 21.	Will applican Give name, ti pertaining to Robert D. APPLICANT A By checking denial of fede of 1988, 21 U the applicatio 1.2002(b).	ach as EXHIBIT No. t be owner and operative, and telephone nutritis application. Briskman, Presented and Series and telephone nutritis application. Briskman, Presented and Series and S	a statementor of the station? mber (include area code), a state of the station? Estident, Satellite ERTIFICATION: applicant certifies that he of the state of	ent giving call sign of licens and Internet e-mail address (i a CD Radio, Inc. 2 or she is eligible for this lice of a drug offense conviction oration, partnership or other	f applicable) of person who 02-296-6840, rbri	YES ate circumstance XX YES can best hand skman@cdr r she is not sub the Anti-Drug , certifies that is purposes, see 4	NO le inquiries radio.com oject to a Abuse Act no party to 7 CFR
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20. F 21.	Will applican Give name, ti pertaining to Robert D. APPLICANT A By checking denial of fede of 1988, 21 U the applicatio 1.2002(b). List below all CHBIT NUMBER	ach as EXHIBIT No. the owner and operative, and telephone numbers application. Briskman, Presented ABUSE Control of the individual ral benefits, including its subject to a denial exhibits in numerical management.	, a statement or of the station? In the control of the station? In the control of the station? ERTIFICATION: In applicant certifies that he control of the station of federal benefits, pursual of federal benefits, pursual of sequence and the item number of the station of the station?	ent giving call sign of licens and Internet e-mail address (i and CD Radio, Inc. 2 or she is eligible for this lice of a drug offense conviction oration, partnership or other ant to that section. For defin	f applicable) of person who 02-296-6840, rbri case. This requires that he opursuant to Section 5301 of unincorporated association, ition of a "party" for these purchased the company of the section of a "party" for the	YES ate circumstance XX YES can best hand skman@cdr r she is not sub the Anti-Drug , certifies that is purposes, see 4	NO le inquiries adio.com oject to a Abuse Act no party to 7 CFR
20. F 21.	Will applican Give name, ti pertaining to Robert D. APPLICANT A By checking denial of fede of 1988, 21 U the applicatio 1.2002(b). List below all CHBIT NUMBER	ach as EXHIBIT No. t be owner and operative, and telephone nutritis application. Briskman, Presented and Series and telephone nutritis application. Briskman, Presented and Series and telephone nutritis application. Briskman, Presented and Series and telephone and	, a statement or of the station? In the control of the station? In the control of the station? ERTIFICATION: In applicant certifies that he control of the station of federal benefits, pursual of federal benefits, pursual of sequence and the item number of the station of the station?	ent giving call sign of licens and Internet e-mail address (i and CD Radio, Inc. 2 or she is eligible for this lice of a drug offense conviction oration, partnership or other ant to that section. For defin	f applicable) of person who 02-296-6840, rbri case. This requires that he opursuant to Section 5301 of unincorporated association, ition of a "party" for these purchased the company of the section of a "party" for the	YES ate circumstance XX YES can best hand skman@cdr r she is not sub the Anti-Drug , certifies that is purposes, see 4	NO le inquiries adio.com oject to a Abuse Act no party to 7 CFR

23. CERTIFICATION:

Attention: Read this certification carefully before signing this application.

THE APPLICANT CERTIFIES THAT:

- (a) Copies of FCC Rule Parts 2 and 5 are on hand; and
- (b) Adequate financial appropriations have been made to carry on the program of experimentation which will be conducted by qualified personnel; and
- (c) All operations will be on an experimental basis in accordance with Part 5 and other applicable rules, and will be conducted in such a manner and at such a time as to preclude harmful interference to any authorized station; and
- (d) Grant of the authorization requested herein will not be construed as a finding on the part of the Commission:
 - (1) that the frequencies and other technical parameters specified in the authorization are the best suited for the proposed program of experimentation, and
 - (2) that the applicant will be authorized to operate on any basis other than experimental, and
 - (3) that the Commission is obligated by the results of the experimental program to make provision in its rules including its table of frequency allocations for applicant's type of operation on a regularly licensed basis.

APPLICANT CERTIFIES FURTHER THAT:

- (e) All the statements in the application and attached exhibits are true, complete and correct to the best of the applicant's knowledge; and
- (f) The applicant is willing to finance and conduct the experimental program with full knowledge and understanding of the above limitations;
- (g) The applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the USA.

Signed and date	ed this	Har	day of	September	. 19_98
Name of Applic	cant Sa	tellite CD Radio	o, Inc.		
• •		(must cr	orrespond with name given on page 1)		
By Rob	ert D. Br	iskman	Robert	D. Buil	
		(print)		(enumero)	
Title Pre	sident				
Check appropriate	classification:				
Individual appl	icant	Member of applicant par	tnershi p		
Authorized emp	oloyee 🔼	Office of applicant corpo	ration or association		

NOTIFICATION TO INDIVIDUALS UNDER PRIVACY ACT OF 1974 AND THE PAPERWORK REDUCTION ACT OF 1980

information requested through this form is authorized by the Communications Act of 1934, as amended, and specified by Section 308 therein. The information will be used by Federal Communications Commission staff to determine eligibility for issuing authorizations in the use of the frequency spectrum and to effect the provisions of regulatory responsibilities rendered by the Commission by the Act. Information requested by this form will be available to the public unless otherwise requested pursuant to 47 CFR 0.459 of the FCC Rules and Regulations. Your response is required to obtain this authorization.

Public reporting burden for this collection of information is estimated to average four (4) hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0065), Washington, DC 20554. DO NOT send completed applications to this address. Individuals are not required to respond to this collection unless it displays a currently valid OMB control number.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPERWORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

EXHIBIT I

By this application, Satellite CD Radio, Inc. (CD Radio), will begin testing of S-Band terrestrial repeater ground stations for its satellite Digital Audio Radio Service (DARS) system. The overall purpose of the requested experimentation is to finalize the engineering of CD Radio's terrestrial repeaters. CD Radio expects that this effort will yield significant new information about power levels required to ensure satellite DARS reception in urban "canyons" and near other obstacles, and will permit as well measurement of out-of-band emissions from such terrestrial stations.

Specifically, CD Radio plans:

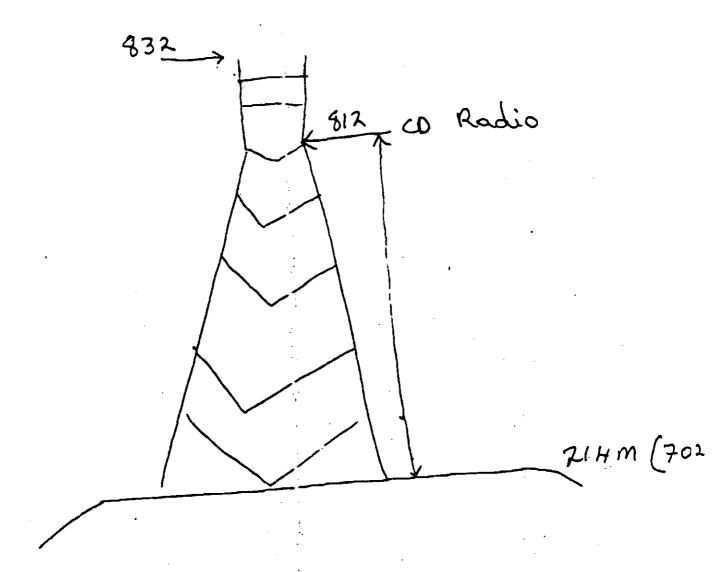
- 1. To measure objective (e.g., signal strength, delay speed, multipath, etc.) and subjective (e.g., music quality) transmission performance using parameter values of operational system.
 - a) Measurements at S-band in CD Radio's licensed spectrum. No confirming measurements of terrestrial transmission performance for Satellite DARS have yet been made.
 - b) Measurements in a severe urban environment. San Francisco is a particularly difficult propagation environment and, additionally, has subenvironments (e.g., hilly terrain, water boundary, treed areas, etc.)
 - c) Measurements in the projected Satellite DARS environment using transmitter sites suitable for the operational system with objective and subjective performance measured in a moving vehicle.
- To optimize transmission parameter values particularly transmitter power and modulation.
 - a) Various power levels of the transmitters will be used with a maximum of 1000 watts

- b) Modulation optimization will be checked, especially number of subcarriers, their spacing and symbol guard time. Performance under doppler conditions will also be confirmed.
- c) Out-of-band emissions and spectral occupancy will be measured, including sidelobe regrowth due to transmitter non-linearity.

EXHIBIT II

Dan Leandro Hills

No Lights



Approved by OMB 3060-0065 Expires 9/30/96

SECTION I

FEDERAL COMMUNICATIONS COMMISSION

FCC FORM 442

FOR	DUPLICATE
ONLY PER	CED OF AUG

2175 K Street, NW	<u> </u>	nstruction (2) on reverse of form)	
MAILING ADDRESS (Line 2) (if	required) (Maximum 35 characte	:rs)	
6th Floor			
CITY			
Washington		ZIP CODE CALL SIGN O	
TATE OR COUNTRY (if foreign DC	address)	20037	R FILE NUMBER
inter in Column (A) the correct Fee Column (B) the Fee Multiple, if appliche number entered in Column (B), if	cable. Enter in Column (C) the result any.	oplying for. Fee Type Codes may be found in F cobtained from multiplying the value of the Fee	CC Fee Filing Guides, Enter in Type Code in Column (A) by
(A)	(B)	(C)	·
FEE TYPE CODE	(if required)	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
E A E		\$ 45.00	
(A)	(B)	(C)	FOR FCC USE ONLY
(A) FEE TYPE CODE	(B) FEE MULTIPL E (if required)	(C) FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
FEE TYPE CODE	FEE MULTIPLE	FEE DUE FOR FEE TYPE	FOR FCC USE ONLY
FEE TYPE CODE	FEE MULTIPLE	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
FEE TYPE CODE	FEE MULTIPLE	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
	FEE MULTIPLE	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
FEE TYPE CODE	FEE MULTIPLE	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY
FEE TYPE CODE	FEE MULTIPLE (if required)	FEE DUE FOR FEE TYPE CODE IN COLUMN (A)	FOR FCC USE ONLY

1.		ame and Post O s, city, state, an	ffice address d ZIP Code. See ins	truction	File No.	DO NOT WRITE IN THIS	BLOCK
	Satellite 2175 K Str Washington	eet, NW, 6	th Floor				
2(a)	. Application fo	or (aback only or	a how)		2(1) 5-14-15		
)(2)		· ·	ne box) adification of existing auth	orization	2(b). For Modificatio	n indicate below:	
3.	-				File No.:	Call S	Sign:
	the change is	an addition or a	replacement of para	meters in the curre	ent authorization.	ier addition or replaceme	nt to indicate whether
	FREQUENCY -	•	EMISSION -		POWER -	LOCA	TION -
[addition or	replacement?	addition or	replacement?	addition or r	eplacement? add	tition or replacement?
				ow or in attached EXHI	BIT No)	
4. Pa	rticulars of Ope	ration (see instr	uction below)		 		T
w	Frequency (state hether kHz or MHz)		POWER		EMISSION	MODULATING SIGNAL	NECESSARY BANDWIDTH (kHz)
	(A)	(8)	(C)	(D)	(E)	(F)	(G)
_23	26.1 MHz	1000W	50.000W	MEAN	M7E	1536 1 kHz.	1,536
				 		384 4 kHz	<u> </u>
			 	 	 		
							
						 	
			<u> </u>		<u> </u>	<u> </u>	<u> </u>
(A) (B) (C)	Insert maximu	m R.F. output p	ower at the transmit	tter terminals. Spe	•	BIT No	.)
(D)			See definitions in Pa	- •			
(E)					n 2.201 of FCC Rules.)		
(F)		•	pe of modulation:	• • •			
-	, -	num speed of k	-				
		n audio modulat	-				
	(3) frequency	deviation of ca	rrier;				
	-	ation and repeti					
			ibe in detail in the s				
(G)	Describe how	the necessary b	andwidth was deterr	mined in space pro	vided below.		

5(a).	Proposed location of transmit	ter and transmitting	antenna (check oni	y one box	to indicate type of operation	on):
	FIXED/BASE	МОВІ			BASE AND MOBILE	
5(b).	If permanently located at a FI	XED location, give l	below:		5(c). If mobile, describ	e the exact area of operation
tate	County	City or Town	- -]	F
CA	San Mateo	<u> </u>	<u> </u>			
Numb	per and street (or other indication	on of location) (S)	kegg.Point)		Receive-only v	ehicular
150	10 Skyline Blvd.					
5(b)(xact to the nearest secon	(see instruction 10)		5(c) (1) Enter geographical c	coordinates of the approximate center of
	Ty, Emergeographics coolerates		- (000 1100 1000 170)		mobile operation (see instruction	
North L	atitude (DD-MM-SS)	West Longitude (DD-A	AM-SS)		North Latitude	West Longitude
3	7 24 38.5	122	18 24 2		• '	' " "
			<u>18 24.3</u>		<u> </u>	
5(d).	Datum (see instruction 10):.	• • • • • • • • • • • • • • • • • • • •	X NAD 27		NAD 83	
6.	Is a directional antenna (other	r than radar) used?	X YES		NO	
	If "YES", give the following		_	_		
	(a) Width of beam in degrees	at the half-power po	oint <u>120</u>			
	(b) Orientation in horizontal	plane 105,	345	(c) (Orientation in vertical plan	e <u>5, 5</u>
	To this cush circuits to be use	d for fulfilling the re			conservation on account	•
7.	Is this authorization to be use United States Government?	d for fulfilling the re	equirement of a gov	ernment	contract with an agency of	ine
			☐ YES	KX.	NO	
	If "YES", attach as EXHIBIT	No	, a narrative statem	_		ct, agency and contact number.
8.	Is this authorization to be use	d for the exclusive o	ourpose of developi	ng radio e	equipment for export to be	employed by stations under the
	jurisdiction of a foreign gover					
			☐ YES	1		•
	If "YES", attach as EXHIBIT	No	, the following info	rmation:	Provide the contract number	er and the name of the foreign
	government concerned.				•	
9.	Is this authorization to be use	d for providing com	munications essent	ial to a re	search project? (The radio	communication is not the objective of
	the research project).			_		
			☐ YES	XX	=	**
	If "YES", attach as EXHIBIT				ding the following informa	uon:
	(a) A description of the nature (b) A showing that the comments				the research project involv	ed.
	(c) A showing that existing (nie rose in project meet	
10.		8, and 9, are "NO",	attach as EXHIBIT	No	I a narrative st	atement describing in detail the
	following: (a) The complete program of		·	مائل رامدا لم	a decariotión of equipmen	t and theory of operation
	(a) The complete program of (b) The specific objectives so			G Incidon	is accertation of education	and meany of operations.
	(c) How the program of expe	rimentation has a re	asonable promise o	of contribu	ution to the development, e	xtension, expansion, or utilization of
	the radio art, or is along	line not already inve	stigated.			•
11	(a). Give an estimate of the le			omplete th	ne program of experimental	tion proposed in this
••	application: 2 y	ear s				
	(b) If less than 2 years, give		months that the au	uthorizatio	on requested in this applica	tion will be
	required:					
12.	Would a Commission grant of		me within Section	1.1307 of	the FCC Rules, such that	it may nave a significant
	environmental impact (see in	struction 11)7	YES	XX	NO	
	If "YES", attach as EXHIBIT	r No				.1311.
	ii i Lu , attacii as LALIMI				<u> </u>	
13.	List below transmitting equi	pment to be installed				NA ACHMITE
)	MANUFACTURER			DEL NUME	BER	NO. OF UNITS
' U	nique Syste ms		DAB2005/0-	-UTX		16
					•	

14.				ation pursuant to Section 5.1		YES	Ø NO
Š	Will the ant- building, or	enna extend more that will the proposed anto	n 6 meters above the ground cana be mounted on an exis XX YES	t, or if mounted on an existing structure other than a b	ng building, will it extend muilding?	nore than 6 met	ers above the
	lf "YES", gi	ive the following (see	instruction 9):				
	(a) Overall	height above ground t	o tip of antenna is4	0 meters.			
	(b) Elevation	n of ground at antenna	a site above mean sea level	is 715	meters.		
	(c) Distance	to nearest aircraft lar	nding area is 16.093	K to Palo Alto Ai	-	_ kilometers.	
	(d) List any would to	natural formations of end to shield the anten	existing man-made structur na from aircraft and thereby	es (hills, trees, water tanks, y minimize the aeronautical	towers, etc.) which, in the chazard of the antenna.	pinion of the a	pplicant.
		None					
	(e) Submit a meters a available	bove ground for all sig	I, a vertical prognificant features. Clearly in	offile sketch of total structure adicate existing portion, noti	including supporting build ng particulars of aviation ob	ing, if any, give	ng heights in ing already
16.	Applicant is:	(Check only one bax)					
	☐ INDIVE	DUAL AS	SOCIATION D	ARTNERSHIP XX C	CORPORATION	•	
	OTHER	(describe in space pro	vided below)				
					•		
	•				•		
							
17.	ls applicant a	foreign government	or a representative of a fore	ign government?		☐ YES	XX NO
18.	Has applican denied by thi	it or any party to this a commission?	pplication had any FCC sta	tion license or permit revok	ed or had any application fo	r permit, licens	e or renewal
	If "YES", att	ach as EXHIBIT No.	, a stateme	ent giving call sign of licens	e or permit revoked and reli	YES	<u>√</u> NO :es.
19.	Will applicar	nt be owner and opera	tor of the station?			XX YES	□ NO
20.	Give name, to	itle, and telephone nu this application.	mber (include area code), a	nd Internet e-mail address (i	if applicable) of person who	can best hand	e inquiries
P	obert D.	Briskman, Pre	sident, Satellite	CD Radio, Inc. 2	02-296-6840, rbri	iskman@cdi	adio.com
21.		ANTI-DRUG ABUSE C					
	denial of fede of 1988, 21 U	eral benefits, including J.S.C. 862. A non-ind	g FCC benefits, as a result of ividual applicant, e.g., corport	or she is eligible for this lice of a drug offense conviction oration, partnership or other ant to that section. For defin	pursuant to Section 5301 of unincorporated association	f the Anti-Drug , certifies that t purposes, see 4	Abuse Act no party to 7 CFR
22		1	1			₩ YES	□ NO
22.		 		mber of form requiring the e		- 	
	HIBIT NUMBER	ITEM NO. OF FORM	EXHIT MAKER	ITEM NO. OF FORM	EXHIBIT NUMBER	ITEM NO	OF FORM
I T	<u> </u>	10 15(e)					
		20(6)					
		<u> </u>	<u></u>	<u> </u>	L		

23. CERTIFICATION:

Attention: Read this certification carefully before signing this application.

THE APPLICANT CERTIFIES THAT:

- (a) Copies of FCC Rule Parts 2 and 5 are on hand; and
- (b) Adequate financial appropriations have been made to carry on the program of experimentation which will be conducted by qualified personnel: and
- (c) All operations will be on an experimental basis in accordance with Part 5 and other applicable rules, and will be conducted in such a manner and at such a time as to preclude harmful interference to any authorized station; and
- (d) Grant of the authorization requested herein will not be construed as a finding on the part of the Commission:
 - (1) that the frequencies and other technical parameters specified in the authorization are the best suited for the proposed program of experimentation, and
 - (2) that the applicant will be authorized to operate on any basis other than experimental, and
 - (3) that the Commission is obligated by the results of the experimental program to make provision in its rules including its table of frequency allocations for applicant's type of operation on a regularly licensed basis.

APPLICANT CERTIFIES FURTHER THAT:

- (e) All the statements in the application and attached exhibits are true, complete and correct to the best of the applicant's knowledge; and
- (f) The applicant is willing to finance and conduct the experimental program with full knowledge and understanding of the above limitations;
- (g) The applicant waives any claim to the use of any particular frequency or of the electromagnetic spectrum as against the regulatory power of the USA.

	Signed and dated this		<u> </u>	day of	September	. 19_98	
	Name	of Applicant	Satellite CD Radi	o, Inc.			
			(must c	orrespond with name given on page 1)			
	Ву	Robert D	. Briskman	Ret	D. Bul		
,		· · · · · · · · · · · · · · · · · · ·	(print)		(signature)		
	Title_	Presiden	t	·			
	Check app	ropriate classific	ation:				
(Individ	lual applicant	Member of applicant par	nershi p			
[Author	ized employee	Office of applicant corpo	ration or association			
			i i		IMPRISONMENT (U.S. Code, Title 47, Section 312(a)(1), AND/OR F	- ·	
_	. Section 5			• • • • • • • • • • • • • • • • • • • •			

NOTIFICATION TO INDIVIDUALS UNDER PRIVACY ACT OF 1974 AND THE PAPERWORK REDUCTION ACT OF 1980

Information requested through this form is authorized by the Communications Act of 1934, as amended, and specified by Section 308 therein. The information will be used by Federal Communications Commission staff to determine eligibility for issuing authorizations in the use of the frequency spectrum and to effect the provisions of regulatory responsibilities rendered by the Commission by the Act. Information requested by this form will be available to the public unless otherwise requested pursuant to 47 CFR 0.459 of the FCC Rules and Regulations. Your response is required to obtain this authorization.

Public reporting burden for this collection of information is estimated to average four (4) hours per response, including the time for reviewing instructions, searching existing data sources, gathering and maintaining the data needed, and completing and reviewing the collection of information. Send comments regarding this burden estimate or any other aspect of this collection of information, including suggestions for reducing the burden to the Federal Communications Commission, Records Management Branch, Paperwork Reduction Project (3060-0065), Washington, DC 20554. DO NOT send completed applications to this address. Individuals are not required to respond to this collection unless it displays a currently valid OMB control number.

THE FOREGOING NOTICE IS REQUIRED BY THE PRIVACY ACT OF 1974, P.L. 93-579, DECEMBER 31, 1974, 5 U.S.C. 552a(e)(3), AND THE PAPER WORK REDUCTION ACT OF 1980, P.L. 96-511, DECEMBER 11, 1980, 44 U.S.C. 3507.

EXHIBIT I

By this application, Satellite CD Radio, Inc. (CD Radio), will begin testing of S-Band terrestrial repeater ground stations for its satellite Digital Audio Radio Service (DARS) system. The overall purpose of the requested experimentation is to finalize the engineering of CD Radio's terrestrial repeaters. CD Radio expects that this effort will yield significant new information about power levels required to ensure satellite DARS reception in urban "canyons" and near other obstacles, and will permit as well measurement of out-of-band emissions from such terrestrial stations.

Specifically, CD Radio plans:

- 1. To measure objective (e.g., signal strength, delay speed, multipath, etc.) and subjective (e.g., music quality) transmission performance using parameter values of operational system.
 - a) Measurements at S-band in CD Radio's licensed spectrum. No confirming measurements of terrestrial transmission performance for Satellite DARS have yet been made.
 - b) Measurements in a severe urban environment. San Francisco is a particularly difficult propagation environment and, additionally, has subenvironments (e.g., hilly terrain, water boundary, treed areas, etc.)
 - c) Measurements in the projected Satellite DARS environment using transmitter sites suitable for the operational system with objective and subjective performance measured in a moving vehicle.
- To optimize transmission parameter values particularly transmitter power and modulation.
 - a) Various power levels of the transmitters will be used with a maximum of 1000 watts

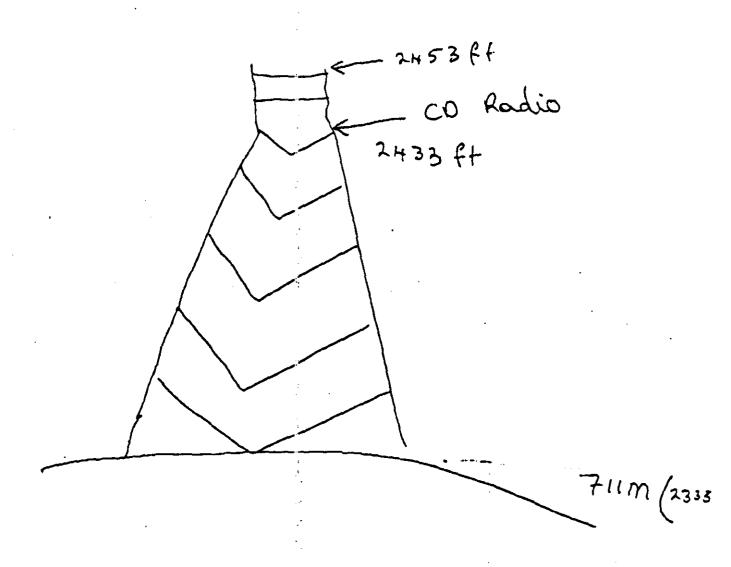
Modulation optimization will be checked, especially number of subcarriers, their spacing and symbol guard time. Performance under doppler conditions will also be confirmed.

c) Out-of-band emissions and spectral occupancy will be measured, including sidelobe regrowth due to transmitter non-linearity.

EXHIBIT II

Skeggs Point

no aviation hights



Approved by OMB 3050-0065 Expires 9/30/98

FEDERAL COMMUNICATIONS COMMISSION

FCC FORM 442

FOR	DUPLICATE
FCC/MELLON	SEP 04 1998

SECTION I					
APPLICANT NAME (Last, first, mic	ddle initial)	· · · · · · · · · · · · · · · · · · ·			
Satellite CD Radio, I	nc				
MAILING ADDRESS (Line I) (Max	imum 35 characters - refer to	Instruction (2) on revers	se of form)		
2175 K Street, NW				ļ	
MAILING ADDRESS (Line 2) (if rec	quired) (Maximum 35 charact	ers)			
6th Floor					
CITY					
Washington				· .	
STATE OR COUNTRY (if foreign ac	idress)	ZIP CODE	CALL SIGN OR F	ILE NUMBER	
DC ·		20037			
Enter in Column (A) the correct Fee Typ	e Code for the service you are a	oplying for, Fee Type Cod	des may be found in FCC	Fee Filing Guides. Enter in	
Column (B) the Fee Multiple, if applicable the number entered in Column (B), if an		t obtained from multiplying	g the value of the Fee Typ	Code in Column (A) by	
(A)	(B)	<u> </u>	(C)		
FEE TYPE CODE	FEE MULTIPLE (If required)	1	FOR FEE TYPE COLUMN (A)	FOR FCC USE ONLY	
(1) E A E		\$ 45.00			
0505101111	 				
	d only when you are requesting o	concurrent actions which	result in a requirement to t	ist more	
than one r	Fee Type Code.				
(A) FEE TYPE CODE		(C) FOR FEE TYPE I COLUMN (A)	FOR FCC USE ONLY		
(2)		\$			
(3)		\$			
(4)		\$			
(5)		\$			
				<u> </u>	
ADD ALL AMOUNTS SHOWN IN COLI THROUGH (5), AND ENTER THE TOT, THIS AMOUNT SHOULD EQUAL YOU	AL HERE.	with th	MOUNT REMITTED HIS APPLICATION OR FILING	FOR FCC USE ONLY	
REMITTANCE.		\$ 45.0			

• •	(Street address, city, state, and ZIP Code. See instruction		DO NOT WRITE IN THIS BLOCK File No.			
Satellite (2175 K Str Washington	eet, NW,	6th Floor				
2(a). Application fo	or (check only o	ine box)		2(b). For Modification	n indicate below.	
New station		lodification of existing auti	horiz ation	1		
3. Application for	or Modification	Check the box besi	de all particulars to	File No.:	Call :	
the change is	an addition or a	replacement of para	ameters in the curre	ent authorization.		m to moreate whether
FREQUENCY -		EMISSION -		POWER -	LOCA	TION -
addition or	replacement?	addition or	replacement?	addition or r	eplacement? add	dition or replacement?
OTHER PARTICUL	ARS - addition or re	placement? (Describe bei	low or in attached EXHII	BIT No)	·
						•
4. Particulars of Occ	nation (one inst	- votice below)				
4. Particulars of Oper	ation (see insu	uction detow)		 	MODULATING	NECESSARY BANDWIDTH (kHz) (G)
whether kirts or Mirts)	<u> </u>	POWER		EMISSION	SIGNAL (F)	
2326.1 MHz	(B)	(C)	(D)	(E)		
2320.1 Finz	1000W	50.000W	MEAN	M7E	1536 1 kHz	1,536
					142 8 kHz	
	 			 		-
					+	
				 		
					_ 	
(B) Insert maximum (C) Insert maximum (D) Insert "MEAN (E) List each type (F) Insert as approx (1) the maximum (2) maximum (3) frequency (4) pulse dur For complex e	im R.F. output im effective rad in effective rad in of "PEAK" (of emission separate for the traum speed of kin audio modulary deviation of cration and repeternissions, description	power at the transmi liated power from the See definitions in Proparately for each free type of modulation; teying in bauds; string frequency; arrier;	itter terminals. Specie antenna (If pulseo art 5). quency. (See Sectio	cify units. d emission, specify peak on 2.201 of FCC Rules.) ow.	BIT No	
•	•	transmitted p	•	TIGOG CEICH.		FCC Form 442 - Page March 199

5(a).	Proposed location of transmit					tion):			
	XX FIXED/BASE	MOBILE			BASE AND MOBILE				
5(b).	If permanently located at a Fl		low:		5(c). If mobile, descr	ibe the exact area of operation			
late CA	County San Francisco	City or Town San France	1.00			•			
	per and street (or other indicati				1				
1403110	ber and street (or other moteath	on or location) (500	10 10#61)		Receive-only	vehicular			
1 1	La Avanzada St.								
5(b)(Enter geographical coordinates e	xact to the nearest second (s	see instruction 10)		5(c) (1) Enter geographica mobile operation (see instruc	coordinates of the approximate center of the control of the contro			
North L	atitude (DD-MM-SS)	West Longitude (DD-MM	I-S\$)		North Latitude	West Longitude			
37	7 45 20	122 2	7 05		• •	• • •			
5(d).	Datum (see instruction 10): .		NAD 27		NAD 83				
6.	Is a directional antenna (other	r than radar) used? 😿	YES		NO				
	If "YES", give the following	information:		_					
	(a) Width of beam in degrees	•			 				
	(b) Orientation in horizontal	pl ane <u>120°, 24</u>	<u>0°. 360°</u>	(c) (Orientation in vertical pla	ine _0°, 0°, 0°			
7.	Is this authorization to be use	d for fulfilling the requ	uitement of a go	vernment	contract with an agency	of the			
••	United States Government?	- ioi tarriime me redi	cein oi a go		comment with the afferter of	72 +51 W			
			YES		NO				
	If "YES", attach as EXHIBIT	No, a	narrative statem	ent descri	bing the government proj	ect, agency and contact number.			
8.	Is this authorization to be use	d for the exclusive pur	pose of develop	ing radio	equipment for export to b	e employed by stations under the			
	jurisdiction of a foreign gover	mment?	- -	_					
			YES	$\overline{\Omega}$					
		`No, tl	he following info	ormation:	Provide the contract num	ber and the name of the foreign			
)	government concerned.				_				
9.	Is this authorization to be use	d for providing commu	unications essent	ial to a re	search project? (The radi	o communication is not the objective of			
	the research project).	_	_						
			YES	XX					
	If "YES", attach as EXHIBIT				ding the following inform	ation:			
	(a) A description of the natur	·							
	(b) A showing that the communications facilities requested are necessary for the research project involved.(c) A showing that existing communications facilities are inadequate.								
	(c) A snowing that existing t	communications faciliti	ies are inadequal	ic.					
0.		8, and 9, are "NO", att	ach as EXHIBIT	Г No	I , a narrative	statement describing in detail the			
	following: (a) The complete program of research and experimentation proposed including description of equipment and theory of operation.								
	(b) The specific objectives sought to be accomplished.								
	(c) How the program of experimentation has a reasonable promise of contribution to the development, extension, expansion, or utilization of								
	the radio art, or is along l				·				
11	(a). Give an estimate of the length of time that will be required to complete the program of experimentation proposed in this application: 2 years								
	application: 2 years, give	the length of time in m	onths that the at	uthorizatio	on requested in this appli	cation will be			
	required:		 _						
2.	Would a Commission grant of this application come within Section 1.1307 of the FCC Rules, such that it may have a significant								
	environmental impact (see in	struction 11)?	T vre	A-Q1	NO				
	Leuszen i miertem im	· Na	YES	<u></u> [四		1 1311			
	If "YES", attach as EXHIBIT	No an	Environmental	A55e55me	ur as reduited by section	. 1·17 t f.			
3.	List below transmitting equip	ment to be installed (i	if experimental,	so state):					
	MANUFACTURER	\		DEL NUME	BER	NO. OF UNITS			
Ur	nique Systems		DAB2005/0-	-UTX		20			
					•				

14,	is the equip	ment listed in Item 13	capable of station identific	ation pursuant to Section 5.1	52?	☐ YES	₩ NO
15.	Will the ante	enna extend more than will the proposed anto		Partecente ottiet trimit # 0.	ng building, will it extend mo		ers above the
	lf"YES". gi	ve the following (see	instruction 9):	□ NO			
			o tip of antenna is	120 meters.			
				is	Tratage		
	(c) Distance	to nearest aircraft lar	nding area is 14.4837	K to San Francis	co Airport	kilometers.	
	(d) List any would te	natural formations of end to shield the anten	existing man-made structur na from aircraft and thereby	res (hills, trees, water tanks, y minimize the aeronautical	towers, etc.) which, in the op	inion of the	opplicant.
		None					
	meters a available	bove ground for all sign.	II . a vertical promificant features. Clearly in	ofile sketch of total structure	including supporting building particulars of aviation obs	ng, if any, giv truction light	ing heights in ing already
16.	Applicant is:	(Check only one box)					
	☐ INDIVE	DUAL AS	SOCIATION P	ARTNERSHIP XX C	CORPORATION		
	OTHER	(describe in space pro	vided below)				•
	•		•				
17.	Is applicant a	foreign government (or a representative of a fore	ign government?		YES	XX NO
18.	Has applican	t or any party to this a	pplication had any FCC sta	ation license or permit revoke	ed or had any application for	permit, licens	se or renewal
		s Commission? ach as EXHIBIT No.	a statem	ane givina anti sim afticana		YES	√ №0
19.				ent giving call sign of licens	e or permit revoked and relat		
		nt be owner and operat				XX YES	NO
20.	Give name, ti	itle, and telephone nu this application.	mber (include area code), a	nd Internet e-mail address (i	fapplicable) of person who	an best hand	le inquiries
Ŧ	•	• •	eident Corollie	CD Padda + 2	02-296-6840, rbris		
			Sateriffe	CD Radio, inc. 2	U2-290-684U, fbf18	Kman@cdi	radio.com
21.	By checking denial of fede of 1988, 21 U	ral benefits, including J.S.C. 862. A non-indi	applicant certifies that he of FCC benefits, as a result of ividual applicant, e.g., corporations	of a drug offense conviction or ather	ense. This requires that he or pursuant to Section 5301 of a unincorporated association, ition of a "party" for these pa	he Anti-Drug certifies that	Abuse Act
22.	List below all	Lexhibits in numerics	I sequence and the item out	mber of form requiring the e	whibit identified	<u> </u>	
	HIBIT NUMBER	ITEM NO. OF FORM	REMAIN THE METERS	ITEM NO. OF FORM	EXHIBIT MANSER	ITCM MA). OF FORM
		10	CATION MANAGER	HER RU. OF FORM	EVAN WWOCK	115.00 140	. W FURM
$-\frac{1}{1}$		15(e)		 		 	
		77(5)		<u> </u>		<u>1</u>	
		13(6)					